

Detailed and Complete Listing of Claims:

1-22. (Canceled).

23. (Previously Presented) A method of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:
 - (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;
 - (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
 - (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and
 - (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and
- (b) a pharmaceutically acceptable carrier.

24. (Previously Presented) The method of claim 23, wherein the bacterial organisms are selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Helicobacter pylori*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus oralis*, *Streptococcus parasanguis*, *Streptococcus pyogenes*, *Streptococcus viridans*, Group A streptococcus and

anaerobic streptococcus, *Hemophilus influenzae*, *Shigella dysenteriae*,
Mycobacterium tuberculosis, *Mycobacterium leprae*, *Mycobacterium asiaticum*,
Mycobacterium intracellulare, *Mycoplasma pneumoniae*, *Mycoplasma hominis*,
Neisseria meningitidis, *Neisseria gonorrhea*, *Klebsiella pneumoniae*, *Pseudomonas*
aeruginosa, *Propionibacterium acnes*, *Treponema pallidum*, *Treponema pertanue*,
Treponema carateum, *Escherichia coli*, *Salmonella typhimurium*, *Borrelia*
burgdorferi, *Leptospirex hemoragia*, *Klebsiella oxytoca*, and *Citrobacter freundii*.

25. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Staphylococcus aureus*.

26. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Streptococcus pyogenes*.

27. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Citrobacter freundii*.

28. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Klebsiella oxytoca*.

29. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Escherichia coli*.

30. (Previously Presented) The method of claim 24, wherein at least one of the bacterial organisms is *Salmonella typhimurium*.

31. (Currently Amended) **A method** ~~The method of claim 23 of treating a~~
mammal suffering from bacterial infection comprising administering to the mammal an
effective amount of a composition comprising:

(a) a purified, host-specific, non-toxic, wide host-range, and virulent
bacteriophage preparation, wherein:

(1) the bacteriophage preparation consists essentially of two or more
bacteriophage strains, wherein each bacteriophage strain is

specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;

- (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
- (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and
- (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and

(b) a pharmaceutically acceptable carrier, wherein the carrier is in the form of a liposome.

32. (Currently Amended) A method ~~The method of claim 23~~ of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:
 - (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;

- (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and**
- (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and**
- (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and**
- (b) a pharmaceutically acceptable carrier,** wherein the carrier is a dendrimer.

33. (Previously Presented) The method of claim 24, wherein the bacteriophage preparation is resistant to one or more properties selected from the group consisting of:

- (a) resistant to exposure to high temperatures;
- (b) resistant to exposure to drying;
- (c) resistant to exposure to lytic agents;
- (d) resistant to exposure to mutator hosts;
- (e) resistant to heat shock; and
- (f) resistant to ionic variation.

34. (Canceled).

35. (Previously Presented) The method of claim 23, further comprising administering an antibiotic.

36. (Previously Presented) The method of claim 35, wherein the antibiotic is selected from the group consisting of aminoglycosides, cephalosporins, macrolides, erythromycin, monobactams, penicillins, quinolones, sulphonamides, and tetracycline.

37. (Currently Amended) A method of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists

essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of staphylococci, hemophili, helicobacter, mycobacterium, mycoplasma, streptococci, neisseria, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borreli, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, **and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates;** and

- (b) a pharmaceutically acceptable carrier.

38. (Previously Presented) The method of claim 37, wherein the bacterial infection is caused by a bacterial organism selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Helicobacter pylori*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus oralis*, *Streptococcus parasanguis*, *Streptococcus pyogenes*, *Streptococcus viridans*, Group A streptococcus and anaerobic streptococcus, *Hemophilus influenzae*, *Shigella dysenteriae*, *Mycobacterium tuberculosis*, *Mycobacterium leprae*, *Mycobacterium asiaticum*, *Mycobacterium intracellulare*, *Mycoplasma pneumoniae*, *Mycoplasma hominis*, *Neisseria meningitidis*, *Neisseria gonorrhea*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Propionibacterium acnes*, *Treponema pallidum*, *Treponema pertanue*, *Treponema carateum*, *Escherichia coli*, *Salmonella typhimurium*, *Borrelia burgdorferi*, *Leptospirex hemoragia*, *Klebsiella oxytoca*, and *Citrobacter freundii*.

39. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Staphylococcus aureus*.

40. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Streptococcus pyogenes*.

41. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Citrobacter freundii*.

42. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Klebsiella oxytoca*.

43. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Escherichia coli*.

44. (Previously Presented) The method of claim 38, wherein at least one of the bacterial organisms is *Salmonella typhimurium*.

45. (Currently Amended) A method ~~The method of claim 37~~ of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates; and

(b) a pharmaceutically acceptable carrier, wherein the carrier is in the form of a liposome.

46. (Currently Amended) A method ~~The method of claim 37~~ of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of

staphylococci, hemophili, helicobacter, mycobacterium, mycoplasma, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates; and

(b) a pharmaceutically acceptable carrier, wherein the carrier is a dendrimer.

47. (Previously Presented) The method of claim 38, wherein the bacteriophage preparation is resistant to one or more properties selected from the group consisting of:

- (a) resistant to exposure to high temperatures;
- (b) resistant to exposure to drying;
- (c) resistant to exposure to lytic agents;
- (d) resistant to exposure to mutator hosts;
- (e) resistant to heat shock; and
- (f) resistant to ionic variation.

48. (Canceled).

49. (Previously Presented) The method of claim 37, further comprising administering an antibiotic.

50. (Previously Presented) The method of claim 49, wherein the antibiotic is selected from the group consisting of aminoglycosides, cephalosporins, macrolides, erythromycin, monobactams, penicillins, quinolones, sulphonamides, and tetracycline.

51. (Currently Amended) **A method** ~~The method of claim 23,~~ **of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:**

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:**

- (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;
- (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
- (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and
- (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and
- (5) wherein the bacteriophage preparation is the isolated bacteriophage composition designated 146A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55950 on April 15, 1997; and

(b) a pharmaceutically acceptable carrier.

52. (Currently Amended) A method ~~The method of claim 23,~~ of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:
 - (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii,

helicobacter, mycobacterium, mycoplasma, streptococci, neisseria, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;

- (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
- (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and
- (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and
- (5) wherein the bacteriophage preparation is the isolated bacteriophage composition designated 173A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55955 on April 15, 1997; and

(b) a pharmaceutically acceptable carrier.

53. (Currently Amended) A method ~~The method of claim 23,~~ of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:
 - (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma, streptococci, neisseria, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;

- (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
- (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and
- (4) the bacteriophage preparation can be safely administered to patients or mammals in need; and
- (5) ~~wherein~~ the bacteriophage preparation is the isolated bacteriophage composition designated 262A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55951 on April 15, 1997; and

(b) a pharmaceutically acceptable carrier.

54. (Currently Amended) A method ~~The method of claim 23~~, of treating a mammal suffering from bacterial infection comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein:
 - (1) the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is specific for the bacterial infection treated and is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex;
 - (2) at least two of the bacteriophage strains are isolated against different strains of bacterial organisms; and
 - (3) each bacteriophage strain is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates

are from the same strain of bacterial organism as that from which the bacteriophage strain is isolated; and

(4) the bacteriophage preparation can be safely administered to patients or mammals in need; and

(5) ~~wherein~~ the bacteriophage preparation is the isolated bacteriophage composition designated 174A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55956 on April 15, 1997; and

(b) a pharmaceutically acceptable carrier.

55. (Currently Amended) A method ~~The method of claim 37,~~ of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

(a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma, streptococci, neisserii, klebsiella, enterobacter, proteus, bacterioides, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates and wherein the bacteriophage preparation is the isolated bacteriophage composition designated 146A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55950 on April 15, 1997; and

(b) a pharmaceutically acceptable carrier.

56. (Currently Amended) A method ~~The method of claim 37,~~ of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates and wherein the bacteriophage preparation is the isolated bacteriophage composition designated 173A and deposited at the American Type Culture Collection (ATCC) under Accession No. 55955 on April 15, 1997; and
- (b) a pharmaceutically acceptable carrier.

57. (Currently Amended) A method ~~The method of claim 37,~~ of treating a mammal suffering from bacterial infection, comprising administering to the mammal an effective amount of a composition comprising:

- (a) a purified, host-specific, non-toxic, wide host-range, and virulent bacteriophage preparation, wherein the bacteriophage preparation consists essentially of two or more bacteriophage strains, wherein each bacteriophage strain is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex, and each bacteriophage strain is effective in killing bacteria from at least 50% of bacterial isolates and wherein the bacteriophage preparation is the isolated bacteriophage composition designated 262A and deposited at the American

Type Culture Collection (ATCC) under Accession No. 55951 on April 15,
1997; and

(b) a pharmaceutically acceptable carrier.

58. (Currently Amended) A method ~~The method of claim 37, of treating a~~
mammal suffering from bacterial infection, comprising administering to the mammal an
effective amount of a composition comprising:

(a) a purified, host-specific, non-toxic, wide host-range, and virulent
bacteriophage preparation, wherein the bacteriophage preparation
consists essentially of two or more bacteriophage strains, wherein each
bacteriophage strain is selected against one of the group consisting of
staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma,
streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes,
pseudomonas, borrelii, citrobacter, escherichia, salmonella,
propionibacterium, treponema, shigella, enterococci, and leptospirex, and
each bacteriophage strain is effective in killing bacteria from at least 50%
of bacterial isolates and wherein the bacteriophage preparation is the isolated
bacteriophage composition designated 174A and deposited at the American
Type Culture Collection (ATCC) under Accession No. 55956 on April 15,
1997; and

(b) a pharmaceutically acceptable carrier.